Are “Low Volatility” funds for you?  
UNDERSTAND THE ADVANTAGES AND RISKS OF INVESTING IN THESE FUNDS.

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The global financial crisis of 2008-09 sparked enormous demand for lower-risk equity products. Today, Canadian investors have access to a multitude of low-volatility strategies from both active and passive managers.

These strategies are by no means all alike, and the advantages and disadvantages are numerous and varied. This paper examines the various types of low-volatility funds, reasons to consider buying them, and reasons to perhaps not consider them. Continued…
What are low-volatility, or “low-vol” funds?

Many investment managers offer funds that exhibit low volatility as a consequence of their investment strategies. Many dividend equity funds, or large-capitalization blue-chip funds, for example, typically display below-average volatility. But what have in recent years come to be known as low-volatility, or “low-vol” funds, are funds giving exposure to a designated market but specifically designed to do so with less volatility than the overall market. This smoother ride is their primary objective.

In practice, this means that these funds are expected to lag the market slightly when times are good, and offer better downside protection when markets fall. In exchange for giving up a little in expected returns, investors expect short-term swings in value – both up and down – to be fewer and less wildly unpredictable. Over the long term, this can translate into better risk-adjusted returns, which makes these funds attractive to risk-averse investors.

Why consider a low-vol fund?

While lower volatility, or downside protection, is the most obvious reason to look at low-vol products, here are some additional reasons to consider them.

A smoother ride.

The attraction of funds purporting to offer a more comfortable investment experience is clear in the history of these funds. Few existed prior to the financial crisis of 2008-09. After that severe retreat in equity markets, there was a surge in investor interest in funds specializing in stocks that fluctuate less than the market as a whole. The best known of these, the PowerShares S&P 500 Low Volatility ETF (Exchange Traded Fund) (stock symbol SPLV) debuted in May 2011. Low-vol funds saw another surge in popularity in early 2016. The first six weeks of that year represented one of the worst starts to the S&P 500 ever, as stocks and many commodities (e.g., oil, metals) reacted to fears that a significant slowdown in Chinese economic growth would trigger a global recession. Many investors used low-vol funds to seek refuge from the financial turmoil.

A toe in the water.

For risk-averse investors, low-volatility funds can provide the ease of mind necessary to serve as an entry point to equity investing.

Confidence to stay invested.

Unfortunately, investors in aggregate tend to buy high and sell low. Many investors, after selling low and feeling “burned,” resist re-engaging with the market until long after a recovery has taken hold and much of the potential return opportunity is past. Investors in low-vol funds, if confident they will participate in much of the upside but experience fewer of the losses on the downside, may be more inclined to stay true to their “buy-and-hold” intentions. This confidence and discipline can help keep investors from panicking and exiting the market at the worst possible time.

Lack of recovery time.

Sometimes the equity market may take considerable time to recover from sharp sell-offs or bear markets. Typically investors are cautioned not to try to time the market, but rather to ride out the ups and downs with a well-diversified portfolio. But many investors, particularly those nearing or in retirement, simply can’t afford to wait out an extended market downturn. A low-volatility fund can help limit risk for these time-sensitive investors while allowing for some participation in a potential upside from equities. In some cases, these funds might also be expected to recover from losses more quickly than traditional funds.
Income.

Although not true of all low-volatility funds, the strategies of many often lead to above-average exposure to companies and sectors that sport above-average dividend yields (e.g., utilities, consumer staples, and telecom services). An investor screening alternatives for income potential, especially in times of exceptionally low bond yields like we have experienced in recent years, may be drawn to some low-vol offerings.

Investors who systematically draw income from their portfolios by regularly liquidating assets may also want to look at low-vol products, as they might better avoid being required to sell units while prices are at downside price extremes.

Higher risk-adjusted returns?

Some analysts suggest broad data and a lengthy history of published research demonstrates that low-volatility stocks tend to outperform the highest-risk stocks over time, and that portfolios built on low-vol strategies can regularly result in higher risk-adjusted returns (Mathieu Caquineau, *Do Low Volatility ETFs Deliver?*, Morningstar, June 2017). One should remember, however, that these funds are not designed or intended to consistently provide outperformance but rather to perform less poorly during market downturns. In times of broader market strength, one should expect to see these products lag in performance. One should also remember that higher risk-adjusted returns mean higher returns for the risk taken, not necessarily higher returns overall.

<table>
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<th>SECTOR WEIGHTS</th>
<th>S&amp;P/TSX</th>
<th>S&amp;P/TSX LOW VOL INDEX</th>
<th>MSCI CANADA MINIMUM VOL INDEX</th>
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**FIGURE 1. SIGNIFICANT DIFFERENCES IN LOW-VOLATILITY INDEX PORTFOLIOS**
All low-vols are not created equal

Among low-volatility funds are myriad strategies – everything from plain-vanilla large cap equity funds to alternative strategy funds. Some are traditional long-only stock holders, and others use derivatives and complex hedging tools. Some focus on the volatility of the individual holdings, while others employ optimization processes to analyze the impact of each position on the volatility of the portfolio as a whole.

To add to the confusion, popular sources of information on investment funds, such as Morningstar Canada or GlobInvest, do not include all low-vol funds in a single category. Instead, funds tend to be classified by the type of asset classes in their holdings; e.g., Small Cap Canadian Equity, or Global Balanced. Furthermore, many popular traditional funds within many categories do not profess to be “low-vol,” i.e., they do not refer to volatility in their names or prospectuses, yet they could be just as aptly described as low-vol as are most funds that do profess it.

Within each of the approaches described below, some funds have no constraints on sector weights relative to the index, some follow the weights of the broad market closely, and others limit holdings so that they are not concentrated in any particular area.

To illustrate the typical range of sector exposures, Figure 1 lists the sector weights for the S&P/TSX Composite Index at the end of 2017 compared to the sector weights of two popular Canadian low-volatility indices.

Portfolios of low-volatility stocks

One of the simplest techniques used to build a portfolio of stocks that is less volatile than the broader market is one that selects stocks that individually exhibit less-than-average volatility, or tend to move around less on a daily basis than the market. In the U.S., for example, the PowerShares S&P 500 Low Volatility ETF, based on the S&P 500 Low Volatility Index, simply holds the 100 S&P 500 stocks with the lowest daily volatility over the past year, defined as the standard deviation of the stock price returns over the preceding 252 trading days. The fund is rebalanced quarterly, weights its holdings by the inverse of their volatility (i.e., the least-volatile stocks receive the greatest weighting), and has no constraints on sector weightings. The fund’s Canadian counterpart, the PowerShares S&P/TSX Composite Low Volatility Index ETF (TLV-TSX), is based on the S&P/TSX Composite Low Volatility Index and pursues a similar strategy, aiming to select the 50 least-volatile stocks from among the constituents of the TSX index.

Note in Figure 1 how this unconstrained approach results in a Canadian low-vol index portfolio with less than 4% weight in energy and 0% in materials, compared to over 30% for these two sectors combined in the broader benchmark index. Similarly, utilities and real estate, which together comprise less than 7% of the Composite index, account for over 40% of the low-vol strategy. Historically, these portfolios of low-volatility stocks tend to deliver market-like returns over time with lower risk. But on any given day, particularly in sharp downturns, an investor is unlikely to see any appreciable difference in their performance relative to the market. They are also highly vulnerable to sector concentration risks and to changes in market conditions because of their strictly backward-looking approach. For example, because utilities and real estate investment trusts (REITs) had shown historically very low volatility, they comprised naturally high weightings in these funds, which made the funds vulnerable due to their interest rate sensitivity. When interest rates suddenly inflected higher in 2016, many of these portfolios suffered.

Stocks with low correlations

Another popular approach considers the correlation between individual stocks, or the degree that stocks tend to move up or down in sync with each other.
Stocks that are uncorrelated with one another, and therefore can balance each other out, may be more effective at reducing overall portfolio variability than two alternative choices that may be each individually less volatile but more highly correlated to each other. Each stock is then selected using a quantitative process that measures its impact on the overall volatility of the portfolio.

The iShares MSCI Canada Minimum Volatility ETF (XMV-TSX) is an example of this approach. Column 3 of Figure 1 shows the sector weights of this fund’s underlying MSCI index. In the energy, materials, utilities and real estate sectors, note how the MSCI approach results in exposures that are not quite as extreme as those generated by the S&P process, but are still significantly different from the corresponding weights in the benchmark S&P/TSX. However, the financials sector, arguably already at a dangerous concentration in the benchmark Composite index, receives an even higher weighting in the MSCI approach.

More sophisticated approaches

Some low-volatility strategies, especially some actively managed ones, now go beyond the traditional “minimum-variance” approach by developing proprietary risk models that attempt to incorporate other sources of risk exposures, such as excessively high valuations or unsustainable price momentum. By enhancing the models to better understand total risk, these managers hope to make their portfolios more adaptive to changing market environments and thus reduce risk more effectively.

Investors Low Volatility Canadian Equity Fund is one such product adopting an enhanced risk framework, incorporating factors such as valuation, quality (e.g., earnings stability), and momentum, to minimize the risk of exposure to low-volatility companies that have become dangerously expensive or that are exhibiting deteriorating fundamentals.

Some funds, such as the IG Putnam Low Volatility U.S. Equity Fund, employ derivative strategies or other complex hedging tools to further limit volatility. In the case of this fund, the managers overlay a well-diversified portfolio of low-beta securities with an option strategy, including selling call options to enhance the fund’s income and buying long-term puts on the index to reduce downside risk.

Investors Low Volatility Global Equity Fund, managed by Irish Life Investment Managers Limited, goes beyond managing the volatility of the portfolio, targeting the reduction of the duration of drawdowns in addition to limiting their frequency and depth. In other words, among this fund’s objectives is not just the mitigation of the frequency and magnitude of losses, but a faster recovery from any losses. With this in mind, the manager’s risk model incorporates a variety of fundamental risk characteristics (e.g., valuation, momentum, dividends) and portfolio construction constraints (e.g., liquidity, turnover, diversification).

Potential risks and challenges of low-volatility funds

As low volatility strategies become popular with risk-averse investors, it is worth noting that “low-volatility” does not mean “risk free.” In pursuing less daily market risk, or a less bumpy ride, these strategies may in fact be exposing investors to other undesirable, and sometimes hidden, risks.

Reliance on past risk data

The investment funds industry constantly reminds its customers that past performance is not necessarily indicative of future results. Similarly, there is no guarantee that the stocks displaying the least volatility historically will continue to do so in the future. Trailing volatility may not reflect current market conditions, recent developments about a company, or other information that pertains to expected future risk.
Reliance on past risk data, i.e., historic volatility, may lead to unexpected results.

**Opaque models**

Funds such as those simply ranking the index holdings by historical volatility are fairly straightforward. But the more enhanced the risk model is, the more likely the fund manager considers it proprietary and keeps the details quiet. As with any investment, it is always advisable to understand the strategy employed so that you can better assess the risks involved and the appropriateness for your portfolio.

**Underperformance in rising markets**

Low-vol funds are expected to result in dampened movements both to the downside and to the upside compared to traditional funds. But the daily volatility of the market over the long run clearly skews towards “up” days. Whether one looks at daily price movements or yearly price movements, equity markets tend to deliver positive returns roughly two-thirds of the time.

In extended streaks without significant correction, low-vol strategies may miss out on significant gains. This is especially true when market performance is concentrated in a limited number of sectors that are under-represented in low-vol funds (e.g., technology in 2017 in the S&P 500, resources in the second half of 2016 in the S&P/TSX).

**Concentration**

We’ve already described how low-vol funds may not rank their selections and exposures based on market capitalization, but instead by the standard deviations of the stock prices, a generally accepted measure of volatility. In doing so, many have no constraints on sector weightings. Focusing only on historical volatility can lead to a dangerous over-concentration in particular sectors, typically so-called defensive sectors such as consumer staples or utilities, or over-exposure to particular risk factors such as interest rate sensitivity. This is why some funds limit holdings, placing constraints on sector, country, or single stock.

**FIGURE 2. S&P 500 LOW VOLATILITY INDEX HAS LAGGED S&P 500 SINCE FINANCIAL CRISIS**

S&P 500 vs. S&P 500 Low Volatility Index, Since 2008-09 Financial Crisis

SOURCE: INVESTORS GROUP; BLOOMBERG
FIGURE 3. LOW VOLATILITY INDICES STRUGGLED THROUGH SECOND HALF OF 2016

S&P/TSX vs. S&P/TSX Low Volatility Index (TR), 2016 Drawdown

SOURCE: INVESTORS GROUP, BLOOMBERG

FIGURE 4. LOW VOLATILITY INDICES STRUGGLED THROUGH SECOND HALF OF 2016

S&P 500 vs. S&P 500 Low Volatility Index, 2016 Drawdown

SOURCE: INVESTORS GROUP, BLOOMBERG
exposures. Optimization models that incorporate additional risk factors such as valuation or momentum can be used to further reduce concentration risk.

Interest rate sensitivity is one factor that has gained particular attention in the last two years as rates inflected off 30-year lows and began trending higher, sometimes in sudden spurts like that seen after the November 2016 U.S. presidential election. Many years of falling rates contributed to low-volatility returns as the rate environment benefitted sectors like utilities and telecom services, which tended to be over-represented in low-vol portfolios due to their historical volatility characteristics. Many low-vol strategies without constraints on exposure to interest rate sensitivity then suffered as rates suddenly began moving higher.

To counter this concentration risk, interest rate sensitivity has now joined valuation as a common factor constraint in low-vol optimization models. For example, S&P developed the S&P 500 Low Volatility Rate Response Index, which the PowerShares S&P 500 ex-Rate Sensitive Low Volatility ETF tracks. To create its eligible investment universe, S&P first ranks all stocks in the S&P 500 by their interest rate sensitivity as determined by a five-year regression of stock returns versus changes in the U.S. 10-year treasury rate. The 100 stocks with the greatest sensitivity are excluded from eligibility, and then of the remaining names, the 100 with the lowest volatility are selected for the portfolio, weighted by the inverse of their volatility.

**Turnover**

Depending on the frequency of rebalancing and sensitivity of optimizing models, some low-vol funds could experience much higher turnover rates in their holdings than more traditional core equity funds. In non-tax sheltered accounts, the trading costs and tax liabilities generated may prove unwelcome to some investors.

**Valuation**

As with any investment strategy, a surge in popularity can worsen the strategy’s future prospects. Too much money chasing a narrow subset of the market will drive up valuations and lower expected returns. It may not even be demand for “low-vol” per se that creates the problem. As we’ve already discussed, a low-volatility strategy can at times greatly overlap other strategies, such as dividend-payers. In any period where risk-averse investors drive demand for stocks with defensive characteristics, low-vol strategies are likely to become more expensive, limiting the potential for future upside participation. Incorporating valuation in their risk models may help some enhanced low-vol strategies mitigate this risk.

**Outflows**

When valuations become stretched as described above, low-volatility funds may be subjected to sharp gyrations or pronounced outflows if the market conditions that drove their popularity become more uncertain. As with any strategy focused on a narrow market subset, low-vol investments may become prone to sudden asset flows that depress valuations in times of market stress. Investors can suffer huge losses if there is a scramble to get out.

**Fat-tailed downside risk**

By measuring success too narrowly, focusing on average returns and variability of returns, funds aiming for low volatility may be inadvertently exposing investors to potentially big losses. At least one study of these strategies has suggested that while average outcomes may be attractive, low-vol strategies can generate a higher probability of very poor results – a “fat-tailed” probability distribution (Andrew Ang, William N. Goetzmann, and Stephen M. Schaefer, “Evaluation of Active Management of the Norwegian Government Pension Fund – Global,” 2009). In other words, despite the strategies’ association with lower
risk, they may carry with them a greater risk of an extreme downside event.

**Many not tested in bear markets**

Most of these funds were created after the financial crisis of 2008 and so they have not yet been stress-tested by an actual bear market. With their relatively short track records, there is no telling what investors can really expect.

Even the popular SPLV ETF, having debuted in 2011, has not yet experienced a prolonged market downturn. The fund’s underlying index, the S&P 500 Low Volatility Index, is older and has experienced a number of retreats. The index behaved roughly as expected, declining less than the overall S&P 500 during the 2008-09 financial crisis (outperforming the S&P 500 by over 15%). The index performed even more admirably during the dot.com bust of 2000-02. But indices and back-tested data are one thing: real-world performance of an investment fund subject to cash flows, trading costs, etc., is another.

**Is a low-volatility fund appropriate?**

We touched earlier on some potential benefits of low-vol funds: a smoother ride, a way to cautiously enter the markets, encouraging the discipline to stay in invested, income possibilities, and the chance for higher risk-adjusted returns. But we’ve also seen some caution is in order.

Even if the potential risks are deemed acceptable, a low-volatility strategy may not be appropriate, especially for long term investors. These funds are designed to be used over an economic cycle, or at least over several years. But if you are committed to a long-term time horizon, that is, holding onto a fund or asset class to capture long-term performance, then potentially sacrificing long-term performance to avoid the daily or weekly ups and downs is perhaps unnecessary. Is feeling a little better along the way that important if your intention is to let it ride regardless of market conditions?

**FIGURE 5. S&P 500 LOW VOLATILITY INDEX OUTPERFORMED S&P 500 DURING FINANCIAL CRISIS (BUT NOT SINCE – FIGURE 2)**


SOURCE: INVESTORS GROUP; BLOOMBERG
And what if you are sensitive to short-term portfolio performance? If you are likely to reconsider your involvement in a low-vol fund in the event that it falls behind the broader index, something that will probably happen in a bull market, will you have the discipline to remember why you invested in the strategy in the first place – to lower volatility?

It is also useful to remember there are other alternatives available to reduce volatility. The traditional way is just to diversify your holdings with uncorrelated assets. Most investors simply start with holding some cash or government bonds along with their equity exposure. And as we suggested earlier, there are countless investment funds available, without “low-vol” in their names, which have delivered decent returns with below-average volatility, and with much longer performance histories than most “low-vol” funds. In addition, there are asset allocation products designed to deliver a similarly “smooth ride,” or a more comfortable investment experience. Investors Group’s family of Maestro dynamic asset allocation portfolios is an example. (Incidentally, a number of low-volatility funds are among the many tactical components used by the Maestro portfolios.)

If you already have a fund with a low-vol equity strategy, what about adding another? In this case it is useful to remember that many low-vol strategies, despite their differences, probably look statistically very similar. If the intent is to improve overall risk-adjusted returns, it may be more effective to look for a different type of actively managed fund with a lower correlation to the first low-vol strategy.

**Conclusion**

The proliferation of low-volatility funds since the 2008 financial crisis expands the options available to investors, but caution is in order. When investors move en masse to defensive sectors in equities, these sectors, and the strategies that focus on them, will get expensive, reducing potential returns.

Some are clearly better choices than others, depending on market conditions (e.g., accounting for interest rate sensitivity when rates are rising), and some employ more sophisticated tools to model and manage risk, which may in turn introduce exposure to other unrecognized forms of risk.

Investors should not be worried about day-to-day volatility, but nonetheless many are. If using a low-volatility strategy gives you the confidence to buy-and-hold, that is probably a good thing.